

## COUPLER-BASED OPTICAL CROSS-CONNECT

### ABSTRACT

An optical cross-connect includes multiple input ports that each receive an optical input signal and multiple output ports that each output an optical output signal. The optical cross-connect also includes a distributing amplifier associated with each  
5 input port that generates multiple copies of the input signal received at the associated input port. Furthermore, the optical cross-connect includes multiple filter units that receive a copy of one or more of the input signals from one or more of the distributing amplifiers and forward traffic in selected channels of one or more of the received  
10 copies. In addition, the optical cross-connect includes a combining amplifier associated with each output port. Each combining amplifier receives the traffic in one or more of the channels forwarded by one or more of the filter units and combines the received traffic into an output signal to be output from the associated output port.